

Claims 60-66 concern that embodiment of the present invention where, when a test surface congruent in shape to the susceptor is placed against the inward side of the adhesive, at least about 35% of the area of the inward side of the adhesive in contact with the test surface can have inscribed within it circles having a diameter of $\frac{1}{2}$ inch or less. Another way of saying this is that at least 35% of the surface area of the susceptor in contact with the adhesive can have inscribed within it circles having a diameter of $\frac{1}{2}$ inch or less. This embodiment is distinct from that of claims 1-7 which relates to the area of the surface contact of a test surface and the outward side of the adhesive, i.e., the opposite side or face of the adhesive. While it is possible that the surface area may be the same in both instances, this is not always true. As shown in Figure 2 of the application, the cross-sectional profile of the adhesive bead can be triangular in shape having a wide surface contact at the base, i.e., at the susceptor interface (the inward side), and a point contact at the peak (the outward side), should a test surface be placed over the adhesive.

Clearly, claims 60-66 are distinct from claims 1-7 and Applicants respectfully request that their rejection under Section 112 be withdrawn.

Anticipation/Obviousness

Claims 1-67 stand rejected under 35 USC 102(b) as being anticipated by or, in the alternative, under 35 USC 103 as being obvious over Brooks, Perrin et. al. or Jackson, Jr. et. al. It is alleged that each of the references clearly teaches Applicants' claimed structure "... when stripped of its patentably insignificant methods of contemplated usage...." Specifically, it is alleged that Applicants' invention is no more than "a thin sheet characterized as a 'susceptor' which is coated with a suitable heat activatable adhesive on at least one surface." It is also alleged that the narrowing aspects of the various dependent claims are believed to be expressly or inherently disclosed by the references or nothing more than obvious optimizations and/or modifications of the state of the art. Applicants respectfully traverse the rejection and request reconsideration.

It is clear that the Patent Office has failed to give any importance or significance to the critical parameters of the invention, namely the profile, pattern and surface area contact of the adhesive. As set forth in claim 1, the area of surface contact between the outward surface of the adhesive and an abutting test piece is such that at least about 35% of that surface area of contact can have inscribed within it circles of one-half inch or less diameter. As mentioned above, claim 60 applies the same test and requirement to the surface area of contact between the adhesive and the layer upon which it is applied, typically the underlying susceptor.

As discussed in the application, the degree of surface area covered by the adhesive and the pattern of that adhesive play an important role in performance of the resultant bond, reversibility of the bond (in the case of thermoplastic adhesives), the time for affecting the bond and the power consumption or energy needed to affect a bond. Too much adhesive (i.e., larger surface area or continuous film of adhesive) and the power demand and/or time to effectuate a bond is higher as there is more adhesive to melt/heat and the conductance of the heat from the susceptor to the adhesive layer is widespread. On the other hand, in a structure where the adhesive covers but a portion of the surface area and is fairly homogeneously dispersed across the surface, heat built up in those areas of the susceptor not in contact with adhesive will conduct through the susceptor to points where contact is made, thus increasing the speed and degree of heat transfer

to the adhesive, thus promoting faster and higher temperatures to ensure a quick and effective bond.

Similarly, if the adhesive covers all or substantially all of the surface area and a low power is applied, there may be points in the adhesive that do not receive sufficient heat to fully melt or activate the adhesive. Consequently, this creates points or areas where a bond fails to be achieved or, if achieved, is weak. Conversely, if a homogeneous bond is achieved, efforts to reverse the bond may fail because insufficient heat is generated across the full bond area to allow the bond to be broken.

None of the art cited by the Patent Office discloses, teaches or suggests the critical limitations with respect to the surface area and pattern of the adhesive as claimed by Applicants. None of the art suggests or infers that the proper selection of adhesive pattern and surface area coverage plays any role in the efficacy of an induction bond, the speed with which induction bonding may be effected and the power demand or need for effecting an induction bond.

In light of the foregoing, Applicants believe that they have fully rebutted the rejection of independent claims 1 and 60 and, therefore, request that the rejections be withdrawn and the claims passed on to allowance. Inasmuch as the independent claims are allowable, all of the dependent claims are likewise allowable and their allowance is also requested.

In view of the forgoing amendment and discussion, Applicants believe the present application is now in condition for allowance and early and favorable consideration is hereby requested.

Although this communication is being submitted by the undersigned authorized representative, correspondence and communications from the Patent Office should continue to be directed to the Attorneys of Record at Frost Brown Todd. No fees are necessary as no claims have been added and this response is being timely filed.

Respectfully submitted,



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I hereby certify that this document and any attachments referenced herein are being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Assistant Commissioner for Patent, Box Non-Fee Amendment, Washington, DC 20231 on this date.


Edward K. Welch II

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